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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------|-------------|-----------------------|---------------------|------------------|
| 10/009,474 | 11/16/2001 | Stuart Lawson | GJ-225J | 1719 |
| 7590 09/13/2005 | | EXAMINER | | |
| Iandiorio & Teska | | KRISHNAMURTHY, RAMESH | | |
| 260 Bear Hill Road | | ART UNIT | | |
| Waltham, MA 02451-1018 | | PAPER NUMBER | | |
| | | 3753 | | |

DATE MAILED: 09/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|---|---------------------------------------|--|
| Office Action Summary | Application No. 10/009,474 | Applicant(s) LAWSON, STUART | |
| | Examiner Ramesh Krishnamurthy | Art Unit 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

This office action is responsive to communications filed 08/12/2005.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/12/2005 has been entered.

Claims 16 – 20 are pending.

1. The amendment filed 12/20/2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: a suction chamber positioned between the valve plate and the cylinder head. The added material has been incorporated into claims, specification and the drawing.

Applicant is required to cancel the new matter in the reply to this Office Action.

2. Amended drawing was received on 12/20/2004. The amended drawing is disapproved for reason(s) set forth above.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 16 – 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

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which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The disclosure as originally filed does not provide support for the claimed "a suction chamber positioned between the valve plate and the cylinder head".

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 16 – 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gyory (US 4,172,696).

Gyory discloses a valve assembly for a pump, comprising a cylinder head (26), port (22) disposed in a valve plate (18), the port being opened and closed by a reed (40) and comprising a tube (28) connected to the valve plate (18), extending vertically into a suction gas chamber that is in communication with the port (22) extending vertically above the port (22) on a side of the port remote from the reed, and the tube (28) being of such a size that, in the use of the valve assembly, the tube contains a column of fluid. A suction chamber is considered inherent to the valve assembly of Gyory and is regarded as the chamber in which the tube (28) is disposed. The reed (40) is positioned on a side of the valve plate (18) which closes a piston (16) and a cylinder (14) arrangement, whereby the reed (40) flexes into the cylinder when the reed opens the port (22).

To one of ordinary skill in the art it is clear that the length of the tube (28) is at least several times (certainly more than twice) the diameter of the port (22) and thus has a column of fluid against which the reed in port (22) has to operate. The fluid in tube (28) is a real fluid that has viscosity and thus to one of ordinary skill in the art, it is an inherent feature that the column exerts a damping effect (via friction) on the motion of the reed. Thus, to one of ordinary skill in the art, the tube (28) is inherently a damping means that serves to provide substantial mechanical damping of the motion of the reed.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 16 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-213077 or by Becker et al. (US 5,275,541) in view of Gyory (US 4,172,696).

The document JP 10-213077 (equivalent to US 6,116,866) discloses a valve assembly for a pump, comprising a cylinder head (1), port (2) disposed in a valve plate (4), the port being opened and closed by a reed and comprising a tube (8) attached to the valve plate (4), extending vertically into a suction gas chamber that is in communication with the port (2) extending vertically above the port (2) on a side of the port remote from the reed, and the tube (8) being of such a size that, in the use of the valve assembly, the tube contains a column of fluid. A suction chamber is considered

inherent to the valve assembly of JP 10-213077 and is regarded as the chamber in which the tube (8) is disposed.

To one of ordinary skill in the art it is clear that the length of the tube (8) is at least several times (certainly more than twice) the diameter of the port (2) and thus has a column of fluid against which the reed in port (2) has to operate. The fluid in tube (8) is a real fluid that has viscosity and thus to one of ordinary skill in the art, it is an inherent feature that the column exerts a damping effect (via friction) on the motion of the reed. Thus, to one of ordinary skill in the art, the tube (8) is inherently a damping means that serves to provide substantial mechanical damping of the motion of the reed.

Becker et al. (US 5,275,541) discloses (Fig. 1 for example) a valve assembly of a fluid pump (1) comprising a port (23) disposed in a valve plate (4), the port being opened and closed by a reed (25) and comprising a tube (21) that is attached to the valve plate (4), the tube being in communication with the port (23), extending vertically above the port (23) into a suction chamber (20), on a side of the port remote from the reed, the tube (21) being of such a size that, in the use of the valve assembly, the tube contains a column of fluid.

To one of ordinary skill in the art it is clear that the length of the tube (21a) is at least several times (certainly more than twice) the diameter of the port (24a) and thus has a column of fluid against which the reed in port (24a) has to operate. The fluid in tube (21a) is a real fluid that has viscosity and thus to one of ordinary skill in the art, it is an inherent feature that the column exerts a damping effect (via friction) on the motion of the reed. Thus, to one of ordinary skill in the art, the tube (21a) is inherently a

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damping means that serves to provide substantial mechanical damping of the motion of the reed.

In both JP 10-213077 and by Becker et al. (US 5,275,541) the reed in the suction valve opens into the cylinder space. However, the pressure pulses – for both suction and discharge are generated by movement of a diaphragm rather than a piston. Examiner takes official notice of the mechanical and functional equivalence of a piston to a diaphragm in producing the pressure pulses that cause the suction/discharge valve to operate. Furthermore, the presence of either a piston or a diaphragm has no bearing on the mechanical damping being provided by the tube disposed on the side of the reed that is remote from the piston/diaphragm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the reed valve arrangement of JP 10-213077 or Becker et al. (US 5,275,541) in a piston driven pumping arrangement such as that disclosed by Gyory since the two modes of pressure generation i.e. diaphragm or a piston or mechanically and functionally equivalent to each other.

Response to Arguments

9. Applicant's arguments with respect to claims 16 - 20 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments concerning examiner's objection to the disclosure under 35 U.S.C. 132 and rejections of claims under 35 U.S.C. 112 1st paragraph have been considered but have been ^{found} to be unpersuasive. While a cylinder head has been mentioned in the disclosure as originally filed, there is no support in the originally filed disclosure for a suction chamber being

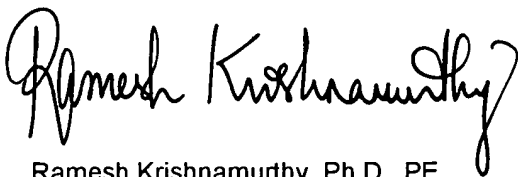
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associated with the cylinder head and the valve plate. There is no mention of a suction chamber in the disclosure as originally filed. Thus, the examiner's objection to the disclosure under 35 U.S.C. 132 and rejections of claims under 35 U.S.C. 112 1st paragraph, as set forth above are proper.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is (571) 272 – 4914. The examiner can normally be reached on Monday - Friday from 10:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frederick Nicolas, can be reached on (571) 272 – 4931. The fax phone number for the organization where this application or proceeding is assigned is (571) 273 – 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Ramesh Krishnamurthy". The signature is fluid and cursive, with the first name "Ramesh" and last name "Krishnamurthy" clearly distinguishable.

Ramesh Krishnamurthy, Ph.D., PE
Primary Examiner
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